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Underage Drinking: A Learning Experience

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Abstract

Presented is a review of an educational program on the topic of alcohol use and abuse among teenagers. A literature review, method, results, discussion, references and appendices are presented.

UNDERAGE DRINKING

A Learning Experience

This study examined alcohol-related attitudes among teens in a suburban community, Pittsford, New York. Data was gathered from students in a New York suburban high school via random self-reported surveys that were distributed in health classes.

According to De Haan and Thompson, the authors suggested that the psychological risk factors of adolescent alcohol use can be summarized as psychological functioning, family environment, peer relationships, and stressful life events. Therefore, alcohol consumption is a high-risk topic that affects all high school students. The authors write that the growing literature indicates that alcohol consumption among high school students is increasing. The purpose of this study is to examine the actual use among 14-18 year olds at Pittsford Mendon High School and compare those results to attitudes and perceptions after engaging in an educational program.

Prevention programs for alcohol abuse are in place at almost every school in the United States (Heflinger, 2006). On average, schools are providing 14 different prevention activities, and 90 percent of public schools provide some information with regard to the topics of alcohol, tobacco, drugs, and risky sexual behavior (Donovan, Leek & Zucker, 2004). However, prevention is more than just programs. Prevention is both policy and attitude, and one without the other usually causes a degree of institutional instability (Donovan et al., 2004).

An effective alcohol prevention strategy is one with developmentally appropriate classroom education, peer-led education, faculty education and training allowing faculty

to recognize alcohol abuse and intervene, local law enforcement and parent groups that meet regularly to discuss underage drinking, school-based policies providing the opportunity for referral and early intervention, and parent discussion groups that meet to discuss and share effective parent strategies and receive training on how to be more effective communicators with their children (Dielman, Shope, Leech, & Butchart, 1989).

Real change will occur when schools and communities recognize that prevention is more than standardized programs, and involves a community effort. There has to be a change in basic goals, content, and process of education at all levels and in all areas concerning alcohol (Shope, Waller & Lang, 1996). Developing the knowledge, understanding, and skills necessary to avoid underage drinking must become a part of educational dialogue on a regular basis. What is needed is an integrated approach linking prevention activities into a comprehensive preventative cooperation effort involving all in a community. Prevention activities that are linked together can have an enormous impact on the health (less drunk driving) and well-being of all members of a community (Shop et al., 1996).

A well-conceived, comprehensive alcohol prevention strategy is a major undertaking requiring substantive commitment to its planning, preparation, implementation, and sustenance. Coordinated, long-term efforts hold the best possibilities for making permanent change and a meaningful difference in alcohol misuse (Young, 1991).

According to the Youth Risk Behavior Survey (YRBS) conducted by the Centers for Disease Control and Prevention (CDC) among high school students, in 2003, 74.9 percent of the high school students had at least one drink of alcohol on one or more days

during their life (CDC, 2004). Current alcohol use or high school students who had one or more drinks in the past 30 days were found to be 44.9 percent (CDC, 2004). Percentage of high school students who had five or more drinks of alcohol in a row (binge drinking) on one or more of the past 30 days was 28.3 percent (CDC, 2004).

With regard to specific subpopulations of high school students also data is available. For example, in 2001, the Bureau of Indian Affairs conducted the Youth Risk Behavior Survey (YRBS) among 8,511 students in grades 9-12 and found that 83 percent female students and 78 percent male students reported lifetime alcohol use (CDC, 2003). This group shows greater prevalence than the national data. It has been found that African Americans and Asian Americans are less likely to misuse alcohol than whites and Hispanic Americans (Ellickson, McGuigan, Adams, Bell & Hays, 1996).

A survey was done about health education in schools in 1996 that found that a median of 87.6 percent of the states and 75.8 percent of the cities included in the survey taught a separate health education course in grades 6-12 and knowledge-based coverage about alcohol and other drugs ranged from 97-100 percent of schools (Grunbaum, Kann & Kinchin, 1998). There are several subjects that need to be taught and health education does not get enough attention. Furthermore, it has been found that knowledge-based curriculum is necessary but often insufficient for behavior change for a majority of students (Grunbaum et al., 1998).

Therefore, there is a need for effective alcohol education programs in high schools. A cross-sectional survey was done with 1,236 high school students in Canada to determine alcohol use, beliefs, and behaviors (Feldman, Harvey, Holowaty & Shortt, 1999). In this study sample 24 percent of students reported never having tasted alcohol,

22 percent reported having tasted alcohol but did not currently drink, 39 percent were current moderate drinkers, 11 percent were current heavy drinkers (five or more drinks on one occasion at least once a month), and 5 percent did not answer the question. The most common reason given for not drinking was because it was "bad for health" and due to the "upbringing" they had received. The most common reasons given for drinking were cited as: "enjoy it" and "to get in a party mood" (Feldman et al., 1999).

Several specialized interventions have been implemented in high schools for primary prevention of alcohol use. Clearly there is a need for more alcohol education in high schools that is either working in conjunction with existing health education curriculum or is in addition to the existing health education curriculum. An Israeli intervention aimed at reducing abuse of alcohol among adolescents was implemented in seven high schools (Pele et al., 2001). The results of the intervention showed that at one and two year follow-ups the rates of alcohol consumption did not change in the intervention group, but rose significantly in the control group thus indicating the effectiveness of the intervention. Such theory-based interventions are needed in our high schools (Pele et al., 2001).

Another component that has been found useful in high school interventions is peer support groups (Wassef et al., 1996). It has been found that peer support groups are an economical and well-accepted method for early recognition and management of emotional and behavioral problems in high schools (Wassef et al., 1996). In a study by Wasef and colleagues (1996) it was found that half of the alcohol and substance users reduced their intake as a result of participating in a program utilizing peer support group.

Ideally, interventions for primary prevention of alcohol use in high school students should start in middle school or junior high school because the behavior is beginning to get started at that time (Santrock, 2001). In a drug abuse prevention program that began in middle school with follow-ups in high school, it was demonstrated that alcohol rates were lowered (Botvin, Baker, Dusenbury, Botvin & Diaz, 1995). In addition to utilizing follow-up sessions in high school, the program utilized building combination of social resistance skills and general life skills. Another important aspect for these interventions must be the focus on skill building (Masten, 2004).

Perry and Kolder (1992) in a review article have suggested that prevention programs are most effective when the target behavior has received increasing societal disapproval, the programs utilize multiple years of behavioral health education, community-wide involvement and mass media complements the school-based peer-led program. Therefore, in order to make primary prevention programs for alcohol prevention more effective they should:

(1) Start in middle school and continue in high schools;

(2) Be added to existing health education curriculum or be designed as complementary programs;

(3) Utilize theory that aims at influencing behavior rather than mere knowledge building;

(4) Utilize peer support groups;

(5) Build specific resistance and general life skills;

(6) Aim for building societal disapproval regarding alcohol consumption;

(7) Must involve community support;

(8) Utilize active mass media component.

Brad Rosenbaum used existing data from the Pittsford Drug and Alcohol Survey to develop a comprehensive, student-driven, educational program to educate students about alcohol use and abuse. The idea behind the program was not necessarily to tell students not to drink, but to give them a base educational level about the inherent dangers about alcohol use. The program informed students of the legal policies in place for underage drinkers. The program was also designed to provide students with skills that would enable them to deal with peer and social pressures.

Literature Review

National surveys make it clear that alcohol drinking among youth is both widespread and harmful (Grant, 2000). These surveys provide data not only on the numbers of middle and high school students who drink but also on how they drink (Grant, 2000). The data shows that when youth drink, they drink heavily in comparison with adults, consuming on average four to five drinks per occasion about five times a month, compared with two to three drinks per occasion a month for adults (Caudill, Crosse, Campbell, Howard, Luckey & Blane, 2006). Studies also find that more than one-fourth of the 14-year-olds reported drinking within the last year (CDC, 2003).

Alcohol is becoming more and more the drug choice among youth (Grant & Dawson, 1998). Young people drink too much and too early an age, thereby creating problems for themselves, for people around then, and for society as a whole. Teens who drink are more likely to drive drunk, or engage in other risky behavior that affects not only themselves, but the public around them as well. Therefore, underage drinking is a leading public health issue in America (Shulenberg, O'Malley & Bachman, 1996).

According to the *Scope of the Problem*, published by the Alcohol Research and Health Digest, the negative consequences of underage drinking include a range of physical, academic, and social problems. Alcohol is the leading contributor to injury death, the main cause of death for people under age 21. Alcohol also plays a powerful role in risky sexual behavior, including unwanted, unintended, and unprotected sexual activity, and sex with multiple partners. Alcohol is also associated with academic failure and future drug use. Over the longer term, data have shown that drinking early in life is associated with an increased risk of developing an alcohol use disorder at some time during the life span (Biglan, Brennan & Foster, 2004).

Alcohol use among young people is commonly associated with a number of social issues, such as poor academic and work performance, community disruption, violence injuries, and even deaths (Biglan et al., 2004). One way to prevent alcohol related-problems is to establish public and institutional policies that reduce overall alcohol consumption rates or reduce rates of high-risk drinking. This is commonly referred to as the "environmental approach" to alcohol problems, changing the community and policy environment to reduce drinking and its health and social problems (Wagenaar & Perry, 1994).

Data from the Monitoring the Future (MTF) 2004 website, an annual survey of U.S youth, show that more than three-fourths of the 12th graders, nearly two-thirds of 10th graders, and more than two in five 8th graders have consumed alcohol at some point in their lives (Monitoring the Future Web site). The most worrisome aspect of underage drinking is the high prevalence of binge drinking, defined as drinking five or more drinks in a row in the past 2 weeks. Monitoring the Future data show that 12 percent of 8th

graders, 22 percent of 10th graders, and 28 percent of 12th graders engage in heavy episodic drinking (Johnston, O'Malley, Bachman & Schulenberg, 2004). The highest prevalence of dependence is seen in people ages 18-24.

Studies also indicate that drinking often begins at very young ages. Data from recent surveys show that approximately 10 percent of 9-10 year olds have already begun drinking (Donovan et al., 2004), nearly a third of youth begin drinking before age 13 (Grunbaum et al., 2004), and more than one-fourth of 14 year olds report drinking within the past year (SAMHSA, 2003). Other researchers have documented that drinking becomes increasingly common through the teenage years (O'Malley, Johnston & Bachman, 1998). In addition, a number of studies have documented that the early onset of alcohol use as well as the escalation of drinking in adolescence are both risk factors for the development of alcohol-related problems in adulthood (Gruber, DiClemente, Anderson & Lodico, 1996).

Data from the National Household Survey on Drug Abuse indicate that the average age of first use of alcohol among young people of all ages was about 16 years old in 1999, compared with 17 in 1965 (SAMHSA, 2003). This is an important statistic because as stated before, initiating alcohol consumption earlier in adolescence or in childhood is a marker for later problems, including heavier use of alcohol and other drugs during adolescence (Robins & Pryzbeck, 1985) and meeting criteria for an alcohol dependence diagnosis in adulthood (Grant & Dawson, 1998).

Survey data indicate that the younger children and adolescents are when they start to drink, the more likely they are to engage in behaviors that can harm themselves and others (Grunbaum et al., 2004). Those who start to drink before age 13 are nine times

more likely to binge drink frequently (five or more drinks on occasion at least six times per month) as high school students than those who begin drinking later. And compared with nondrinkers, a greater proportion of frequent binge drinkers (nearly 1 million high school students nationwide) engaged in other risky behaviors in the past 30 days (Grunbaum et al., 2004), including carrying a gun, using marijuana, using cocaine, and having sex with six or more partners. In addition, these youth were more likely than abstainers to earn grades that are mostly D's or F's in school (15 percent vs. 5 percent), or be injured in a suicide attempt (Biglan et al. 2004).

Underage drinking can result in a range of short-term and long-term consequences, such as academic problems, social problems, physical problems such as hangovers, unwanted, unintended, and unprotected sexual activity, sexual assault, memory problems, increased risk for suicide and homicide, alcohol related car crashes and other unintentional injuries, death from alcohol poisoning, and alterations in brain development that may have consequences reaching far beyond adolescence (Barrouillet, 2002). Alcohol is by far the leading contributor to injury death, the main cause of death for people under the age of 21 (NHTSA, 2003). Annually, about 5,000 youth under the age of 21 die from alcohol related injuries that involve underage drinking. This includes injuries sustained in motor vehicle crashes (about 1,900), homicides (about 1,600), and suicides (about 300), as well as unintentional injuries not related to motor vehicle crashes (NHTSA, 2003). These numbers may be significantly underreported, in parts because in most states, alcohol involvement in an injury relieves insurance providers of liability for medical expenses, so health care providers may not ask victims about, or report alcohol use (NHTSA, 2003).

School Programs

School based prevention activities are necessary, but they are not enough to address the complexities of the underage-drinking problem (Shope, Copeland, Maharg & Dielman, 1996). Adolescent's lives extend beyond the walls of the schools. Adolescents interact in their communities, consume our media culture replete with pro-drinking and pro-drug using messages, and are members of complex peer and family systems where issues of belongings and connectedness are crucial.

A school-based prevention program can account for only some of the risk factors that influence an adolescent's decision to drink or use other drugs. For this reason, school based programs will always be limited in their impact on adolescent behavior and attitudes towards substance abuse (Azrin, Donohue, Besalel, Kogan & Acierno, 1994). No single program component can prevent multiple high-risk behaviors.

According to Educational Digest, in 2004, 20 percent of eight graders and 60.3 percent of twelfth-graders reported that they had gotten drunk at least once over the course of just that year, according to the National Institute of Drug Abuse. Of the 10.7 million underage youth who drink, 7.2 million or roughly 31 percent of all high school students binge drink with a frequency of at least once a month.

Much literature and educational efforts are directed towards underage college students. Underage students who lived in residence halls or in fraternities and sororities reported widespread exposure to alcohol education materials (NIAAA, 2002). In 2001, some underage students said that they had experienced direct educational efforts from their school (lectures, workshops, meetings, or special classes). The exposure to these educational efforts increased from 1993 to 2001. An even larger proportion of these

underage students reported having been exposed to indirect educational methods, such as mailings or articles, although research has found no significant increase in the exposure to these methods over time (NIAA, 2002).

Most underage students who live in on-campus housing report that their respective schools provide information to them about alcohol. Two in every three college students in 2001 reported that their college or university provided them with alcohol educational materials (NIAA, 2002).

Developmental Issues

A mix of many different kinds of factors underlies the development of problem drinking in young adults. For this very reason, research focusing on any one area is likely to miss the complex interactions that shape how an adolescent will respond to the availability of alcohol.

Most research takes a developmental approach (Greenough et al., 1987) Research that takes a developmental approach seeks to provide an understanding of behavior in the context of the changes that take place during human maturation. The developmental perspective assumes interactions that not only are complex but that change over time (Greenough, Black & Wallace, 1987).

An almost universal theme whenever adolescent drinking is addressed related to how adolescents think and make decisions about the world around them (Sroufe & Rutter, 1984). The classic, and most widely held belief is that adolescents have not yet achieved full maturity of their cognitive processing and that they are more likely than adults to make risky decisions. Most of the literature (too much to review for the purpose of this paper, and just synthesized) exists containing many variations of this conclusion

(Santrock, 2001). However, one of the most classic, is the transition to the Piagetian concept of "formal operations" in thinking style has not yet taken place. Another prevalent view is that adolescents are very egocentric and feel invulnerable to harm because of their perceived uniqueness (Elkind, 1967, 1978). Along with these ideas, adolescents use rational thinking in fewer situations than adults and depend more on intuitive processing that involves cognitive heuristics and judgment biases (Agnoli, 1991).

Social considerations are a potentially important factor; that is, adolescents are understood to be very interested in their social standing among their peers and therefore are more vulnerable to decision making that relies heavily on what other adolescents are doing (Kandel, 1978). Related to this notion is that personal identity is less well established in adolescence, with the result that young people are more influenced by what they perceive others around them to be doing (Kandel, 1978). A more recent view of this theme is based on a neurological development: the neural substrate for emotional behavior develops in advance of the more frontal, rational decision making portion of the brain (Luna & Sweeny, 2004).

Theories of the Development of Adolescent Problems with Alcohol

The following is a sample, and a general overview of the historically most influential theories in research on the origins and progression of problems in adolescents with alcohol and other drugs. The scope of the issues is much larger than what can possibly be addressed in this paper. Therefore, a general overview is provided. The main theories are examined and condensed.

The "gateway" theory comes from research that examines the patterns of alcohol and other drug use progression among adolescents (Kandel & Faust, 1975). The research suggests that adolescents initially experiment either with alcohol and/or cigarettes and then progress to marijuana. Once marijuana is experienced, adolescents may then try other illicit drugs such as heroin and cocaine. The experiment with alcohol, or other legal drugs, act as a gateway towards illicit drug use (Kandel & Faust, 1975).

The "problem behavior theory" is an influential conceptual framework for understanding not only problematic alcohol and other drug use but also a wide variety of high-risk behaviors (Jessor & Jessor, 1977). The theory proposes that there may be a combination of deviant behaviors that may manifest themselves in many different ways. For example, adolescents with alcohol problems may engage in a spectrum of problem behaviors, such as illicit drug use, delinquent behaviors (truancy, petty theft, vandalism, lying, running away) risky and precocious sexual activity, and other high-risk behaviors (drunk driving) (Jessor & Jessor, 1977).

The "maladaptive coping theory" states that high-risk behaviors also may be adaptive to the extent that they serve a social or maturational goal such as separating from parents, achieving adult social status, or gaining peer acceptance (Spear, 2000). Engagement in high-risk behaviors may help an adolescent cope with failure, boredom, stress, social anxiety or isolation, unhappiness, rejection, and low self-esteem. One example of maladaptive coping is an adolescent's use of alcohol and other drugs as a means of gaining social status and acceptance from peers, and at the same time, enhancing mood and ridding oneself of feelings of low self-worth (Durant, 1995). Thus, problematic involvement with alcohol and other drugs for some adolescents may be a

maladaptive means of coping with the stresses and social pressures that are characteristic of the adolescent stage of development, particularly in the absence of adult support, guidance, and monitoring (Elkind, 1977).

Psychosocial Processes

The interactions among alcohol-related genes, biological development, and environment play out in the psychosocial processes underlying adolescent decisions to drink or to abstain from drinking. Psychosocial research on adolescent drinking encompasses studies of personality and the impact of particular personality traits on drinking risk, expectancies (the effect someone expects from drinking alcohol), and cognitive development (Stuss & Benson, 1984).

As is true with adults, studies and most research have failed to find a specific set of personality traits that uniquely predict alcohol use. Also, in adolescence, personality is not stable, and is markedly different than it will be in adulthood. However, there have been a few personality traits that have been associated with heavy alcohol use and alcohol use disorders in adolescents. These traits include poor self-regulation, impulsiveness and aggression, and novelty seeking (Stuss & Benson, 1984). Negative emotions, such as depression and anxiety, also have been found to predict alcohol problems. Adolescents in these cases may use drinking as a coping strategy (Dishion, Duncan & Eddy, 1994).

Alcohol-related expectancies influence how early a child will begin to drink and how much they will drink at that point (Stefian, 1999). Research has suggested that people who have expectancies of more positive experiences from drinking tend to drink more than others and are highest risk for excessive drinking.

As stated earlier, an almost universal theme whenever adolescent drinking is addressed related to how adolescents think and make decisions about the world around them. According to the research, differences between adults and adolescents in decision making appear in situations that have social or emotional overtones (Cicchetti & Tucker, 1994). Like adults, adolescents may vary their judgments based on social context, but the contexts that encourage such decision-making differ for adults and adolescents.

Although the relationship between personality and alcohol use disorders has been studied extensively in adolescents and adults (Sher et al., 1999), far less research has been conducted with respect to personality and alcohol involvement earlier in childhood.

Because adolescence is a period of dramatic physical, social, and interpersonal change, it is reasonable to believe that the structure and stability of adolescent personality differs in important ways from the structure and stability of adult personality (Santrock, 2001). Most of the current literature and research focuses on the rank order stability of various personality traits from adolescence through adulthood. For this reason, most literature focuses on the fact that personality stability appears to increase throughout adulthood.

As stated earlier, the relationship between personality traits and adolescent alcohol use has failed to find a correlation. However, there are certain personality traits that are consistently associated with adolescent drinking patterns, moodiness, anger, disinhibition and poor self-regulation (Fergusson & Horwood, 1999)

Traits related to disinhibition or poor self-regulation have been shown to predict both heavy alcohol use and alcohol use disorders in adolescent samples. For example of one author, Soloff and colleagues (2000) found higher levels of impulsiveness and

aggression among a sample of young adults with alcohol use disorders than among age matched control subjects. Other studies have found relationships between alcohol problems and behavioral under control, low constraint, rebelliousness, low hard avoidance, and a host of other disinhibited traits (Colder & O'Connor, 2002). Also, impulse control disorders such as conduct disorder, oppositional defiant disorder, and borderline personality disorder are highly associated with adolescents with alcohol use (Clark et al., 1997).

Negative affectivity also has been shown to predict alcohol problems in adolescents. For example, Colder and Chassin (1993) found that negative affect was associated with both heavy drinking and frequency of alcohol use in a sample of 452 adolescents. They found that negative affect predicted alcohol use, and interacted with impulsivity to predict both alcohol use and alcohol-related impairment.

Within the alcohol related research fields, there has been a special focus on expectancy and the development of drinking patterns from childhood through adolescence and into young adulthood (Christiansen et al., 1989). Due to the constraint of this literature review, only the main findings will summarize the majority of ideas. There has been a consistent finding that among expectancies there are higher levels of drinking for those for enhanced social/sexual functioning and positive emotional outcomes. The data basically states that adolescents who hold more expectancy for positive/arousing outcomes from drinking are more likely to endorse drinking itself.

Legal Implications

The challenges that must be confronted in developing effective legal and policy strategies for combating underage alcohol use include the realities that alcohol use is a

normative behavior among adults and is aggressively promoted by the industry and glorified in the media (Snortum et al., 1998). Also, alcohol is considerably cheaper compared to thirty years ago and is relatively easy for youths to obtain.

Alcohol control policies influence the availability of alcohol, the social messages about drinking conveyed by advertising and other marketing approaches, and the enforcement of existing alcohol laws (Labor et al., 2003). Availability of alcohol can be determined by policies that specify who can consume alcohol, where it can be consumed, and how and where alcohol is distributed and sold, as well as policies that regulate how alcohol is advertised and marketed (Toomey & Wagenaar, 1999). Laws prohibiting underage drinking, the sale of alcohol to minors, or underage drinking and driving are a third component of the broader social environment that influences drinking by young adults.

Minimum drinking age laws are one set of tools that have been used to combat alcohol use among minors. In 1984, the United States passed the National Minimum Purchasing Age Act, which encourages each state to enact a minimum legal standard of 21 years for purchasing alcohol (Weschler & Henry et al., 1999). The minimum legal drinking age law may be the singe most effective method to combat alcohol use and its adverse consequences among young people.

In addition to the Minimum Legal Drinking Age law there are other laws that help govern the use of alcohol by people under the age of 21. Some of these laws include prohibitions on attempts to purchase or consume alcohol and on an individual use of false identification to purchase alcohol by someone under the legal drinking age (Snortum et al., 1998). Laws also exist in some state that require those who sell alcohol to be 25

years of age or older (Wagenaar & Toomey, 2002). In addition to the laws restricting alcohol sales by age, a series of laws aimed at limiting purchase of alcohol for high volume sales and consumption, such as happy hour sales, keg registration, and pitcher sales are in effect in some states. These legal controls have received less attention in research on alcohol use among those below the legal drinking age (Wagenaar & Toomey, 2002).

The primary and most-studied alcohol control measure relevant to underage drinking is the establishment of the MLDA. Many studies have shown that the MLDA is effective in reducing alcohol consumption and traffic crashes among 18-20 year olds, and some studies have found that the MLDA-21 is associated with reductions in other problems that are associated with underage drinking such as alcohol-related suicide and vandalism (Wagenaar & Toomey, 2002).

Studies have shown that several policies and environmental strategies have strengthened MLDA laws and reduced the access to alcohol by minors. An example of such a policy is by checking the compliance of commercial outlets by having a minor attempt to purchase alcohol under the supervision of a law enforcement officer (Wagenaar et al., 2005). If an establishment sells alcohol to the underage person, penalties can be applied to both the server and the license holder. Studies have shown that compliance checks are effective in reducing sales to underage youth (Wagenaar et al., 2005) and indicate that compliance checks may affect drinking behavior (Holder et al., 2000).

Colleges are mandated to address underage drinking and comply with the MLDA law (White et al., 2003). In 1989, the US Congress passed the Safe and Drug Free

Schools Act, which requires that colleges and universities publish information about laws that regulate drug and alcohol use including the MLDA, acquaint students with the consequences of breaking those laws; periodically evaluate the effectiveness of the institutions policies (White et al., 2003).

Other policies targeting youth access to alcohol, such as beer keg registration and penalties for producing or selling false identification documents have also shown some effect on underage drinking rates. States have tried to cut down on underage drinking by enacting keg registration laws (Grasmick & Green, 1999). The idea behind these laws is to cut down the amount of mass alcohol purchase and distribution. To purchase a keg, one needs to register the keg to a driver's license, with the registration being attached to the keg. If the keg is returned without the registration attached, the purchaser loses a hefty deposit (Grasmick & Green, 1999).

Since New York raised its legal drinking age to 21, alcohol problems among young people have been significantly reduced, according to a preliminary study by the states office of alcoholism and substance abuse services (SOASAS, 2003). The report follows Governor George Pataki's signing of a "zero tolerance" law that automatically suspends a driver's license of anyone under the age of 21 caught with even low blood alcohol levels. Pataki has also proposed lowering the blood alcohol levels for all drivers from .1 to .08 percent.

The house of representatives has approved a bill that would require the department of health and human services to create a yearly report card that rates the performance of each state in fighting underage drinking. Representative Lucille Royal-Allard, democrats from California was the lead sponsor of the Sober Truth on Preventing

Underage Age Drinking Act, which passed on Nov 14, 2006. In addition to report cards, the bill would also authorize grants that would go towards preventing underage drinking in colleges and universities, and require data collection and research on such drinking.

All states have laws ranging from a misdemeanor or felony that prohibit adults from providing alcohol to minors. However, some states are taking another step. In 2005, Arizona, Colorado, Louisianan, Texas, and Virginia passed laws that automatically suspend a driver's license for up to 6 months if convicted of providing alcohol to minors. Representative Michele Reagan says the law is a deterrent because people do now want to lose their drivers license. At least seven other states introduced similar legislation in 2006. In some states, like Kansas and Wyoming and Connecticut, adults face 6 months in jail for providing alcohol to minors in their home.

There are two law enforcement techniques that local law enforcement agencies employ to enforce underage drinking laws, Cops in Shops programs, where police officers are deployed as undercover officers in alcohol selling outlets to detect and site persons under the age of 21 who attempt to purchase alcohol, and the other is compliance checks. This is a technique where police officers use underage decoys to attempt to purchase alcohol from retail merchants (Cook & Moore, 2002).

Other policies have been enacted to help curb the use of alcohol by minors. One of the most studied policies has been the raising of alcohol prices. The most common method of raising pries is increase Federal, State or local taxes on alcoholic beverages. Many studies, using various designs and analytic methods, including high-quality longitudinal design, have shown that as alcohol prices increase, alcohol consumption declines (Cook & Moore, 2002). Studies show that underage youth are particularly

sensitive to increased price, decreasing their alcohol consumption by a greater amount than older drinkers when prices increase (Chaloupka et al., 2002).

Traffic crashes are the leading cause of death among teens, and 32 percent of all drivers age 16-20 who died in traffic crashes in 2003 had measurable alcohol in their blood; also 51 percent of drivers age 21-24 who dies tested positive for alcohol (NHTSA, 2004). One effective strategy to reduce drinking-driving is to lower the legal limit allowable blood alcohol content (BAC) for drivers. In the past two decades, all states in the United States have adopted a BAC limit of .08 percent for adult drivers and have a BAC limit of zero, or slightly higher for youth under age 21. These are referred to as a "zero tolerance" laws (NHTSA, 2004).

Studies have found that laws setting the legal-allowable BAC at .08 percent have resulted in 5-percent to 8-percent reductions in alcohol-related fatal traffic crashes among all drivers. (Bernat et al., 2004) Laws setting the BAC limit at .02 percent have led to a 19-percent reduction in drinking-driving and a 20-percent reduction in fatal traffic crashes among young drivers (Wagenaar et al., 2001).

There have been many programs and studies about underage drinking. There have been some very prominent and famous educational or alcohol prevention programs that have been created. The reviews are varied from decent to average. The following is a sample of some programs that have been created and implemented to educate or reduce underage drinking.

The Saving Lives Project

The Savings Lives project was a designed to reduce alcohol-impaired driving and related problems such as speeding (Hingson et al., 1996) in six communities in

Massachusetts over a 5-year period. In each community, a full-time city employee organized a task force of representatives of city departments to work on the project, which was funded at the rate of $1 per inhabitant annually to pay for the local coordinator, police enforcement, program activities, and educational materials. The task force designed the specific activities its community would implement. These included media campaigns, speeding and drunk-driving awareness days, telephone hotlines for reporting speeders, police training, high school peer-led education, establishment of Students Against Drunk Driving chapters, programs for college students, and information for retail alcohol outlets about drinking and risks (Hingson et al., 1996).

Over the 5 years of the program, the participating communities saw a 25 percent reduction in fatal car crashes and more than a 40 percent reduction in alcohol-related fatal crashes relative to the rest of the State. The program effect was most pronounced among drivers between ages 15 and 25; among young adults in this age range there was a 39 percent reduction in fatal crashes compared with the rest of the state. In addition, program communities experienced a 5 percent reduction in crashes involving injuries that required medical attention and an 8-percent reduction in crash injuries among 16-25 year olds (Hingson et al., 1996).

Injuries, motor vehicle injuries in particular, are the major causes of death and disability among teenagers, and alcohol is involved in the majority of these injuries (NHTSA, 2003). Although school-based alcohol prevention programs have the reduction of these accidents as their ultimate goal, these outcomes are seldom measured. Instead, more immediate outcomes, such as alcohol-related knowledge, attitudes, intentions, and behavior usually are measured by self-reports from students (Sharmer, 2001). Many

reviews of school-based programs for preventing drinking and driving, note that although certain types of programs resulted in immediate knowledge gains as well as appropriate changes in attitudes and self-reported behavior, these effects dissipated with time. Furthermore, according to Sharmer, he stated that the impact of these programs on traffic safety needed more documentation.

Several high school-based prevention programs recently have been developed and subsequently evaluated. "Alcohol, Drugs, Driving and You" a 10th grade curriculum, resulted in increased knowledge and more favorable attitudes (Young, 1991). "Stop the Drinking Driver", a behavioral school based program that targeted all students in a high school, found that after the program, students reported that they were less likely to drive while intoxicated (Yates & Dowrick, 1991). A ninth-grade program aimed at reducing drinking, drinking and driving, and riding with a drinking driver significantly increased knowledge and perceived ability to resist pressures to drink but did not change self-reported drinking or in drinking and driving (Newman et al., 1992). The program "Teams, Games, Tournaments" alcohol and driving education program produced initial and subsequent positive effects on knowledge, self-reported drinking, and drinking and driving and suggested that future studies analyze drinking/driving citation outcomes (Wodarski & Bordnick, 1994). In Australia, a 10th-grade drinking/driving educational program produced a trend toward less drinking/driving in the intervention group, although both experimental groups reduced this behavior during the 3-year follow-up period (Sheehan et al., 1996). As part of the Minnesota Heart Health Program, a ninth-grade program, "Shifting Gears," which addressed smoking, alcohol use, drinking and driving behavior, and marijuana use, resulted in less drinking, problem drinking, and

driving after drinking shortly after the program, but the effects were not maintained (Klepp et al., 1995). The authors suggested the need for supportive community-wide strategies to maintain the desired behaviors. Most educational programs were successful in educating students on the dangers and problems associated with drinking. However, many if not all programs do not have significant changes in the self-reported drinking frequency.

Project Northland's school interventions (beginning with sixth-grade students and continuing through high school) included community action in an ambitious, comprehensive, prevention approach that also included parent education and involvement (Williams & Perry, 1998; Williams et al., 1999). The 12th-grade outcome results, which follow high school intervention activities, are still not finished being computed (Perry et al., 2000), but at the end of 11th grade, the intervention students were drinking less. Among baseline (sixth-grade) non-users, however, marginally significant differences were found. This major study presents an ideal opportunity to learn if the drinking behavior of the teenagers involved is positively affected by educational interventions.

Ideally, one would want to track behavior well beyond those immediate outcomes, problems, and consequences that are primarily tied to the use of alcohol, to include injury-related behaviors as well. It is particularly important to monitor the subsequent driving behaviors of students exposed to a prevention program. The long-term evaluation of one school-based alcohol misuse prevention program was later funded to study the driving behavior of the subjects on whom much data had been collected. The high school Alcohol Misuse Prevention Study curriculum was effective in increasing students' alcohol misuse prevention knowledge and alcohol refusal skills and in reducing

alcohol misuse (Shope et al., 1993, 1996). It was, however, important to determine if these positive effects extended to the students' driving behaviors. Preliminary results of driving outcomes from the first 2 years were promising and showed a positive program effect on the number of serious offenses (Shope et al., 1996). As the subjects gained more driving experience (as indicated by years of licensure), the program effects over a longer time period could be examined.

Methods

Sample and Sources of Data

During the 2003-2005 school years, high school students from the Pittsford Central School participated in a Drug and Alcohol Survey, an ongoing study that is surveyed every 3 years within the district that had been last done by Anne Bayer in 2003. All available students with parental permission participated in a fall survey, which served as a pretest to the curriculum that followed later those same school year's. Classes of Health Science students within the high school were assigned to receive the educational curriculum taught by Brad Rosenbaum and or Anne Bayer. A copy of the educational discussion is provided in the appendix. Follow-up surveys were conducted after the curriculum.

Curriculum

Students in Health Classes received the Alcohol Educational Program curriculum in one 50-minute class session. The curriculum was developed to serve as fresh material for those students new to alcohol information but at the same time to augment earlier material for those who had previous alcohol education. Goals of the curriculum included increasing student awareness of the short-term effects of alcohol, risks of alcohol misuse

(including drinking and driving, legal implications), and situations and social pressures to misuse alcohol that students might encounter. Students were introduced to skills for dealing with such pressures and situations to help shield them against peer and other social pressures to misuse alcohol. Audio-visual materials (PowerPoint presentation, included in Appendix A), student activity sheets, and handouts were used to maintain student interest. Positive effects of the curriculum on students' knowledge, alcohol misuse, and refusal skills were found at the follow-up. To ensure that the curriculum was standardized and implemented as designed, Brad Rosenbaum used the same PowerPoint presentation and information.

Survey

After administration of the curriculum, students completed questionnaires that covered several psychosocial topics as well as self-reported alcohol use and misuse. Brad Rosenbaum and Anne administered the questionnaires in students' regular Health classrooms and answered students' questions in a standardized manner. Students were assured that responses would be confidential, and classroom teachers were positioned so as not to inhibit or bias students' responses.

Survey Measures

The Pittsford Central School District survey data provided information that was used as a base about subjects' race (83% white, 17% nonwhite), family structure (63% lived with two parents, 37% did not), alcohol use and misuse, and parental attitudes toward young people's use of alcohol. To assess frequency and quantity of alcohol use, separate items for beer, wine, and liquor were used.

Frequency of alcohol use was asked for each substance (number of times per year

added in parentheses): “How often have you had beer (wine, liquor) in the past 12 months? Never (0), a few times a year or less (3), about once a month (12), about once a week (52), 3 or 4 days a week (182), or every day (365)?”

Quantity also was assessed separately for each substance (number of drinks added in parentheses): “When you drank beer (wine, liquor) during the past 12 months, how many cans/bottles (glasses, drinks) did you usually have at one time? None (0), less than one drink (0.5), one drink (1), two drinks (2), three or four drinks (3.5), five or six drinks (5.5), or seven or more drinks (7)?”

Total annual alcohol consumption was estimated by multiplying the number of episodes per year by the number of drinks per episode. Subjects consumed an average of 2.1 drinks per week (SD 6.7). Two single alcohol misuse questions were included in this analysis. “During the past 12 months, how many times did you get drunk: never, once, two or three times, four or five times, or six or more times?” “During the past 12 months, how many times have you had five or more drinks in a row: none, once, twice, three to five times, six to nine times, or ten or more times?”

Four in 10 students (40%) reported getting drunk at least once, and 40% reported having five or more drinks in a row during the previous 12 months. The following 10 questions about alcohol misuse during the past 12 months were used to construct an alcohol misuse index. Responses to and codes for frequency were never (0), once (1), two times (2), or three or more times (3).

1. How many times did you drink more than you planned to?

2. How many times did you feel sick to your stomach after drinking?

3. How many times did you get talked into doing something you didn’t want to do after

drinking?

4. How many times did you get into trouble with your friends because of drinking?

5. How many times did you have a friend of the same sex complain about your drinking?

6. How many times did you have a friend of the opposite sex complain about your drinking?

7. How many times did you have someone you were dating complain about your drinking?

8. How many times did you get into trouble with your parents because of your drinking?

9. How many times did you get into trouble with teachers, school counselors, or the principal because of your drinking?

10. How many times did you get into trouble with the police because of your drinking?

Parental attitudes toward young people's alcohol consumption were assessed with the question, "How do your parents feel about kids your age drinking beer, wine, or hard liquor? Do they think it is a very good idea, a good idea, neither a good nor a bad idea, a bad idea, or a very bad idea?" The small percentage (0.3%) of students who indicated that their parents approved of their alcohol use was combined with those who were indifferent (7.7%); the remainder disapproved (30%) or strongly disapproved (62%).

Results

Outcome Measures

The American Drug ad Alcohol Survey (ADAS) is a survey given to students across the country to gather information about the nature and extent of substance use among youth. The survey was developed with assistance from the National Institute of Drug Abuse. This survey is conducted every 3 years in the Pittsford Central School

District.

In Pittsford, 2, 881 students in grades 6-12 completed the survey in March 2003. This number represented roughly 87 percent of the student population. The results of the survey were projected onto 100 percent of the student body.

The "have you ever tried" statistic is useful to determine students' willingness to use alcohol, even if it is only once. Most teens who are in treatment for substance use began to use alcohol as young as 11 or 12 years old. It is important for prevention programming to understand how willing students are to use alcohol, and how that willingness changes.

As students reach high school, the "have you ever tried" statistic becomes less useful since it is a cumulative statistic. Many young people may try alcohol for a while, and then stop using it. "Current use" gives a better indication of how many students are actively using alcohol now.

Table 1

Middle School Trends of Students Who Have Tried Alcohol

	1991	1994	1997	2000	2003
6th Grade				28%	17%
7th Grade	58%	35%	39%	33%	24%
8th Grade	83%	63%	62%	42%	32%

Table 1 shows changes in middle school students' willingness to use alcohol, even a sip or two, over the past 12 years. The reduction between 2000 and 2003 data is statistically significant for all grade levels. That means that there is a less than 1 percent

chance that these changes occurred randomly. Prevention efforts have made a significant impact on children and in time, hopefully the entire Pittsford district will benefit.

Table 2

High School Trends of Students Who Currently Use Alcohol

	1991	1994	1997	2000	2003
9th Grade	33%	43%	36%	39%	26%
10th Grade	46%	51%	55%	40%	37%
11th Grade	49%	66%	53%	54%	43%
12th Grade	59%	70%	64%	63%	51%

Table 2 shows high school students' reported use of alcohol in the 30 days before the survey. The reductions seen between 2000 and 2003 data for grades 9, 11, and 12 are statistically significant changes. While these positive changes signal a change in community norms, many students continue to put themselves and others at risk due to their alcohol use. About 418 (22%) high school students report "being drunk" in the 30 days prior to the survey.

There are a variety of situations in which youth may use alcohol in addition to the top places listed in table 3. For example, Seniors indicate that they have used alcohol: on the way to school-6 percent; on campus during school hours-14 percent; off campus during school hours-17 percent; right after school-19 percent; while driving around-17 percent.

Table 3

Where Pittsford Students Use Alcohol

When/Where	6th	7th	8th	9th	10th	11th	12th
At night with friends	3%	9%	18%	43%	50%	62%	70%
At parties	6%	9%	16%	40%	45%	66%	69%
At home (parents do no know)	3%	7%	12%	31%	30%	37%	40%
At home (parents do know)	17%	21%	18%	15%	17%	22%	27%
At school events	.5%	.5%	2%	11%	11%	11%	18%

Data shows that half of all Pittsford high school-aged adolescents did not use any alcohol in the 30 days prior to the survey. However, 22 percent of their peers drank at least three times, with some drinking alcohol on more than 10 occasions in one month. According to the recent data, recent trends in experimentation among middle school-aged adolescents since 1990 has been decreasing. With educational plans like the one created by Brad Rosenbaum, hopefully the numbers will translate into fewer students at the high school level using alcohol.

Discussion

Previous analyses have shown that the high school alcohol misuse prevention curriculums were effective in increasing students' alcohol misuse prevention knowledge and alcohol refusal skills and in reducing alcohol misuse (Shop et al., 1993, 1996). The analyses reported here attempted to determine if those positive effects reached into alcohol-related knowledge, and, if so, how long such effects lasted. After examining the

Pittsford data, it was found that the Alcohol Prevention curriculum to increase the knowledge of alcohol awareness by an estimated 20 percent. In a finding similar to that of others (Williams et al., 1999), the effect of the curriculum was particularly strong among those students who were drinking less than one drink per week on average before the curriculum. These findings indicated that teenagers who had not yet started routine drinking benefited the most from a 10th-grade, school-based intervention designed to reduce alcohol misuse.

In contrast, those adolescent who were already drinking one or more drinks per week showed no benefit in their alcohol awareness. This finding fits with others in the prevention and problem behavior literature—young people who had not started drinking benefited the most from the intervention program's messages about drinking and other risky behaviors.

Interestingly, among both those who drank less than one drink per week and those who drank more than one drink per week, students who reported that their parents had expressed disapproval of young people's drinking demonstrated less benefit from the program than did those whose parents had not expressed disapproval. This finding could be explained by the students' self-reported drinking itself—those who drank more probably had generated an opportunity to hear from their parents about parental attitudes regarding young people's drinking. Those who drank less may not have heard their parents' attitudes expressed. Students who reported that their parents had not expressed disapproval of young people's drinking were in the minority, and they represented only 7 percent of the total number of subjects. The 20 percent of students who drank in the face of parental disapproval and showed little benefit to their driving from the intervention

program were very likely students who were testing limits and exhibiting other problem behaviors. It is possible that such students could react negatively to a prevention program, an outcome that should be carefully guarded against.

These results suggest that a high school Alcohol Education program can positively affect alcohol awareness. Future programs could be adapted to accommodate students' differences about their current alcohol use and parental attitudes toward teen drinking. Such programs also should be augmented by follow-ups after students have acquired more education and by other community-based programs.

There is a possibility that all the alcohol educational programs have reached the point that it is possible that the complexity of preventing underage drinking and other drug use could be overwhelming the capacities of secondary schools. During the year 2004, 20 percent of eighth-graders and 60.3 percent of twelfth-graders reported that they had gotten drunk at least once over the course of just that year, according to the National Institute of Drug Abuse (NIDA). Of the 10.7 million underage youth who drink, 7.2 million or 31 percent of all high school students binge drink with a frequency of at least once a month.

Complicating these figures with regard to just the area of teen drinking is the further finding that 21.5 percent of eighth-graders and 51.1 percent of twelfth-graders had, at some point in their life, tried illicit drugs. Harder to capture in these survey results are the many related issues that misuse of alcohol and other drugs foster for teens: motor vehicle crashes, personal injury, sexual assault, teen pregnancy, vandalism, and impaired intellectual and social development.

Alcohol is, of course, far more pervasive than illicit drugs among teens. According to NIDA, alcohol kills six times more teens than all illicit drugs combined. Federal spending on the "War on Drugs" has increased from $1.65 billion in 1982 to $17.9 billion in 1999. Despite these massive increases in spending over this time, more than half of high school students have tried an illegal drug before they graduate.

There is a growing frustration among school administrators that alcohol prevention programs are not doing the job that they are being advertised to accomplish. One principal was quoted as saying: "After years of implementing programs, seminars, bringing in speakers, and redesigning our wellness curricula several times, I do not feel that we have made any progress in curbing the drinking culture at our school." This shows how overwhelmed a community can get trying to address underage drinking and drug use.

School-based prevention activities are necessary, but they are not enough to address the complexity of the problem. Adolescents' lives extend beyond the walls of classrooms and the manicured lawns of the campus. Adolescents interact in their communities, consume our media culture replete with pro-drinking and pro-drug using messages, and are members of complex peer and family systems where issues of belongingness and connectedness are crucial.

A school-based prevention program can account for only some of the risk factors that influence an adolescent's decision to drink or use other drugs. For this reason, school-based programs will always be limited in their impact on adolescent behavior and attitudes towards substance use. No single program component can prevent multiple high-risk behaviors.

Rather, a set of coordinated, collaborative strategies and programs is required in each community for this problem to be dealt with effectively. An integrated approach is necessary in order for us to impact the confluence of risk factors contributing to underage drinking and other drug use. Multi-component strategies that include two or more strategies together such as family and student programs or school prevention activities and community initiatives will have a greater impact than a single approach would have.

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Appendix A

PowerPoint Presentation

A Discussion About Alcohol

Brad Rosenbaum
School Counselor Intern

About me…

- School Counselor Intern at MHS since 2006

- Wayne Central High School Business Teacher
- Red Cross First Aid CPR Instructor

What ?

- Alcohol

How ?

Where?

What Happens?

- What are the consequences of alcohol use / abuse?

The list goes on and on…

- Bad grades
- Lose trust of family and friends
- Legal trouble
- Accidents / injuries
- Do something you regret (sexual or otherwise)
- Get into a fight
- Money problems
- Health problems
- Brain Damage
- Death
- Etc
- Etc

Why ?

- Curiosity ? Boredom ?
- Escape Problems ? Self Medicate ?
- Lower inhibitions ?
- Family ? Rebellion? Enabling?
- Ease pain ?
- Have Fun ?
- Peer Pressure ?
- Other Reasons ?

Lets Talk About Peer Pressure…
"All The Cool Kids Are Doing It"
Peer Pressure vs. Peer Presence
(external) (internal)

- Internal emotional need for acceptance and inclusion (not an external force).

Peer Presence…

- Peer pressure implies it something done "to you", in which you had no choice (…"it's not my fault I got drunk and high, my friends (peers) pressured me.") NO…you have an internal locus of control; you chose to drink and smoke.
- Are kids more likely to drink and smoke if their friends do? Of Course…peer presence not peer pressure.

Emotional Negatives

- Fear
- Anxiety
- Depression
- Loneliness
- Sadness / Loss
- Pain
- Etc…

What do we know about teens?

- Internal emotional need for inclusion and acceptance…
- Often do not care about future health affects, future consequences, or future reputation
- Experience emotional negatives…(intensity of these feeling?)…more tolerable if not felt alone (included).
- Scientific Theories about brain development clearly indicate teens take more risks (seek excitement)…

The Teen Brain...

- **The frontal lobes**
  The frontal lobes play important roles in a variety of higher psychological processes - like planning, decision making, impulse control, language, memory, and others. There is mounting evidence that neuronal circuitry in the frontal lobes is shaped and fine tuned during adolescence, and that experience plays a prominent role in these changes. (White, 2004, Duke)

Brain Development

- Prefrontal Cortex – higher order brain centers which handles reasoning and other executive functions does not fully develop until adulthood. (NIMH, 2004)

Why (cont'd)

- We know that Teens have a profound need for acceptance and inclusion…
- We know that they experience intense emotional negatives…
- We are learning that they are biologically at a higher risk

And…there exists an added phenomenon…

•Absence of Initial Harmful Affects…

- Does Alcohol use/abuse = Death?

- Does Alcohol Use/abuse = negative consequence ?

- Always?
- Sometimes?

- Eventually !!!!

- If you or someone you know is having problems because of Alcohol use, Please stop and see me or one of the counselors to talk confidentially!